REMARKS/ARGUMENTS

This is intended to be a complete response to the Office Action mailed May 05, 2003, in which claims 1-48 were rejected, claims 12-14 were objected to, and drawings were objected to by the Examiner.

In the Specification, paragraph **[0019.]** has been amended to correct minor editorial problems.

In amended FIG. 1, the previously omitted element numeral 10 has been added. In amended FIG. 2, the previously omitted element numeral 50 has been added.

Claims 1-48 remain in this application. Claims 1, 8, 15, 22, 29, 34, 39, and 44 have been amended to better define the inventive concepts recited therein and to improve the readability of such claims. Claims 9, 12, and 48 have been amended to correct typographical errors.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 8, 15, and 22 were rejected under 35 U.S.C. § 102(b) as being anticipated by "Body condition scoring and weight estimation of horses"; C.L. Carroll and P.J. Huntington; Equine Veterinary Journal, Equine vet.J. (1998) (1); PGS. 41-45 (herein referred to as Carroll et al.). In rejecting Applicants' claims 1, 8, 15, and 22, the Examiner stated that Carroll et al. discloses a method for estimating the weight of a horse by measuring a girth, a length, and a height of the horse, and determining an

estimated weight of the horse based on the girth, the length, and the height of the horse.

As will be discussed in further detail hereinafter, the rejection under 35 U.S.C. § 102(b) of claims 1, 8, 15, and 22, as amended, are respectfully traversed. Claims 1, 8, 15, and 22 are not believed to be anticipated by Carroll et al. on the basis that Carroll et al. does not expressly or inherently describe each and every element as set forth in the above-referenced claims (see MPEP § 2131).

Applicants' claim 1 recites a method for estimating the weight of a horse based on measuring a girth, a length, and a height of the horse. As background, applicant Alyssa Hapgood, began gathering data on 224 horses over a two year period at the age of twelve years old. She recorded the girth, height, length, weight, age, breed, and gender of each horse in the research sample to develop equine weight estimation models having a higher adjusted R-squared value than any other existing equine weight estimation model. Claims 1, 8, 15, and 22 have been amended to specifically recite a method for estimating the weight of a horse based on a mathematical formula including the girth, the length, and the height of the horse, wherein at least two of the girth, the length, and the height in the mathematical formula have a different significance in the mathematical formula. Basis for this amendment is found on pages 13-14 of the specification.

For example, the following mathematical formula was developed by the Applicants to estimate the weight of a horse:

Weight Estimate = k1 X Girth^{x1} X Height^{x2} X Length^{x3}

where k1 is a constant and, x1, x2 and x3 are exponents.

Carroll et al. states in the introduction of "Body condition scoring and weight estimation of horses" that the purpose of the work was to "obtain reliable estimates of bodyweight from linear measurements and condition score of a large number of horses of variable fatness." Carroll et al. constructed nomograms, which is a graph consisting of three coplanar curves, each graduated for a different variable so that a straight line cutting all three curves intersects the related values of each variable, to predict the weight of a horse from height and condition score, and girth and length measurements. Carroll et al. found that "weight of horses was highly correlated with height, condition score and girth^2 x length" (page 41, col. 1, line 5). Although Carroll et al. recorded the girth, length, and height measurements of a variety of horses, the nomograms constructed to estimate the bodyweight of a horse, as shown in Fig. 2 and Fig. 3, do not use the combination of the girth, length, and height measurements to predict the weight of the horse. That is, Carroll et al. does not produce a nomogram correlating the relationship between the girth, the length, and the height measurements of a horse to more accurately estimate the weight of the horse.

Applicants further believe that the correlations between weight and physical measurements, as displayed in page 44, Table 2, line 7 by Carroll et al., do not expressly or inherently describe a method for estimating the weight of a horse based on a mathematical formula including the girth, the length, and the height of the horse,

wherein at least two of the girth, the length, and the height in the mathematical formula have a different significance in the mathematical formula. On page 44, Table 2, line 7, Carroll et al. shows a correlation between weight and girth x length x height, wherein the girth, the length, and the height variables are weighted equally and have substantially the same impact on the estimated weight of the horse. Therefore, it is Applicants' belief that Carroll et al. fails to disclose a method for estimating the weight of a horse based on a mathematical formula including the girth, the length, and the height of the horse, wherein at least two of the girth, the length, and the height in the mathematical formula have a different significance in the mathematical formula as recited in claims 1, 8, 15, and 22.

For the reasons set forth above, it is respectfully requested that the Examiner withdraw the rejection of Applicants' claims 1, 8, 15, and 22, as amended, and pass such claims to issue.

Claims 29, 34, 39, and 44 were also rejected under 35 U.S.C. § 102(b) as being anticipated by "Body condition scoring and weight estimation of horses"; C.L. Carroll and P.J. Huntington; Equine Veterinary Journal, Equine vet.J. (1998) (1); PGS. 41-45 (herein referred to as Carroll et al.). In rejecting Applicants' claims 29, 34, 39, and 44, the Examiner stated that Carroll et al. discloses a method for estimating the weight of a horse by measuring a girth and a height of the horse, and determining an estimated weight of the horse based on the girth and the height of the horse.

As will be discussed in further detail hereinafter, the rejection under 35 U.S.C. § 102(b) of claims 29, 34, 39, and 44, are respectfully traversed. Claims 29, 34, 39, and 44 are not believed to be anticipated by Carroll et al. on the basis that Carroll et al. does not expressly or inherently describe each and every element as set forth in the above-referenced claims (see MPEP § 2131).

Claims 29, 34, 39, and 44 have been amended to specifically recite a mathematical formula including the measured height and the measured girth of a horse, wherein the measured height and the measured girth in the mathematical formula have a distinct significance in the mathematical formula. Basis for this amendment is found on pages 14-15 of the specification.

For example, the following mathematical formula was developed by the Applicants to estimate the weight of a horse:

Estimated Weight = K3 x Girth^{x5} x Height^{x6}

wherein K3 is a constant and x5 and x6 are exponents.

As previously stated, Carroll et al. constructed nomograms to predict the weight of a horse from height and condition score, and girth and length measurements. Carroll et al. does not produce a nomogram correlating the relationship between the girth and the height measurements of a horse to more accurately estimate the weight of the horse. On page 44, Table 2, line 6, Carroll et al. shows a correlation between weight and girth x height, wherein the girth and the height variables are weighted equally and are not distinctly adjusted by factors or exponents to reflect the relative

impact of such variable in the correlations. Therefore, it is Applicants' belief that Carroll et al. fails to disclose a method for estimating the weight of a horse based on a mathematical formula including the girth and the height of the horse, wherein measured girth and the measured height in the mathematical formula have a distinct significance in the mathematical formula.

Therefore, for the reasons set forth above, it is respectfully requested that the Examiner reconsider and withdraw the rejection of Applicants' claims 29, 34, 39, and 44, as set forth in the Office Action dated May 05, 2003, and pass such claims to issue.

Claim Rejections - 35 U.S.C. § 103

Claims 2-7, 9-14, 16-21, and 23-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over "Body condition scoring and weight estimation of horses"; C.L. Carroll and P.J. Huntington; Equine Veterinary Journal, Equine vet.J. (1998) (1); PGS. 41-45 (herein referred to as Carroll et al.) and further in view of Eric W. Weisstein's world of mathematics at http://mathworld.wolfram.com/ © 1999. In rejecting claims 2-7, 9-14, 16-21, and 23-28, the Examiner stated that Carroll et al. discloses a method for estimating the weight of a horse by measuring a girth, a length, and a height of the horse, and determining an estimated weight of the horse based on the girth, the length, and the height of the horse. The Examiner however stated that Carroll et al. "fails to disclose estimating the weight of a horse based on a linear regression of height, length, and girth." Thus, the Examiner attempted to apply the teachings of

Weisstein to supply the deficiencies of Carroll et al. That is, the Examiner stated that Weisstein discloses linear regression as a method for fitting a curve through a set of points using some goodness-of-fit criterion. Thereafter, the Examiner concluded that it would have been obvious since linear regression can provide the "best possible solution to a relationship between variables such as length, height, and girth."

For the reasons set forth hereinafter, the Examiner's rejection of Applicants' claims 2-7, 9-14, 16-21, and 23-28 under 35 U.S.C. § 103(a) as being unpatentable over Carroll et al. in view of Weisstein is respectfully traversed. Claims 2-7, 9-14, 16-21, and 23-28 recite a mathematical formula for estimating the weight of a horse wherein the exponents and factors in the mathematical formula are unique. The unique exponents and factors of Applicants' mathematical formula contribute to a higher correlation between the estimated weight and the girth, length and height measurements of the horse. The combination of Carroll et al. and Weisstein does not teach or suggest the limitations of claims 2-7, 9-14, 16-21, and 23-28 because Carroll et al. discloses a higher correlation between the estimated weight and the girth measurement of the horse, thereby motivating a person of ordinary skill in the art to estimate the weight of a horse based on exclusively measuring the girth of the horse instead of measuring the girth, the length, and the height of the horse as recited in Applicants' claims 2-7, 9-14, 16-21, and 23-28.

Carroll et al. discloses the adjusted R-squared correlations between weight and physical measurements on page 4, Table 2. The adjusted R-squared of girth X length

X height measurement, as shown in Table 2, is 0.85; whereas, the adjusted R-squared of the individual girth measurement is 0.87. A higher adjusted R-squared correlation suggests to a person of ordinary skill in the art to pursue the combination of physical measurements that provide the most accurate estimate for the bodyweight of a horse. Therefore, Carroll et al. teaches away from estimating the weight of a horse based on the girth, length, and height measurements and motivates one skilled in the art to solely measure the girth of a horse for a more accurate estimate of weight. Based on the MPEP 2143.01, it is the Applicants' belief that Carroll et al. in combination with Weisstein does not suggest or motivate a person of ordinary skill in the art to estimate the weight of a horse by measuring the girth, the length, and the height of the horse and utilizing a mathematical formula as recited in claims 2, 5, 9, 12, 16, 19, 23, and 26.

For the reasons set forth above, it is respectfully requested that the Examiner withdraw and reconsider the rejection of Applicants' claims 2-7, 9-14, 16-21, and 23-28, as amended, and pass such claims to issue.

Claims 30-33, 35-38, 40-43, and 45-48 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over "Body condition scoring and weight estimation of horses"; C.L. Carroll and P.J. Huntington; Equine Veterinary Journal, Equine vet.J. (1998) (1); PGS. 41-45 (herein referred to as Carroll et al.) and further in view of Eric W. Weisstein's world of mathematics at http://mathworld.wolfram.com/ © 1999. In rejecting claims 30-33, 35-38, 40-43, and 45-48, the Examiner stated that Carroll et

al. discloses a method for estimating the weight of a horse by measuring a girth and a height of the horse, and determining an estimated weight of the horse based on the girth and the height of the horse. The Examiner however stated that Carroll et al. "fails to disclose estimating the weight of a horse based on a linear regression of girth and height." Thus, the Examiner attempted to apply the teachings of Weisstein to supply the deficiencies of Carroll et al. That is, the Examiner stated that Weisstein discloses linear regression as a method for fitting a curve through a set of points using some goodness-of-fit criterion. Thereafter, the Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have used linear regression to estimate the weight of a horse since linear regression can provide the "best possible solution to a relationship between variables such as height and girth."

For the reasons set forth hereinafter, the Examiner's rejection of Applicants' claims 30-33, 35-38, 40-43, and 45-48 under 35 U.S.C. § 103(a) as being unpatentable over Carroll et al. in view of Weisstein is respectfully traversed. Claims 30-33, 35-38, 40-43, and 45-48 recite a mathematical formula for estimating the weight of a horse wherein the exponents and factors in the mathematical formula are unique. The unique exponents and factors of Applicants' mathematical formula contribute to a higher correlation between the estimated weight and the girth and height measurements of the horse. The combination of Carroll et al. and Weisstein does not teach or suggest the limitations of claims 30-33, 35-38, 40-43, and 45-48

because Carroll et al. discloses a higher correlation between the estimated weight and the girth measurement of the horse, thereby motivating a person of ordinary skill in the art to estimate the weight of a horse based on exclusively measuring the girth of the horse instead of measuring the girth and the height of the horse as recited in Applicants' claims 30-33, 35-38, 40-43, and 45-48.

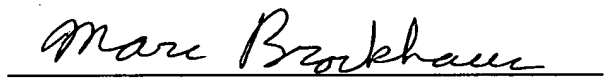
On page 44, Table 2, Carroll et al. discloses the adjusted R-squared correlation between weight and girth X height to be 0.84. Carroll et al. also discloses the adjusted R-squared correlation between weight and girth to be 0.87. Therefore, Carroll et al. suggests to a person of ordinary skill in the art to solely measure the girth of a horse to obtain a more accurate estimate for the bodyweight of the horse instead of measuring the girth and the height of the horse. It is the Applicants' belief that Carroll et al. teaches away from estimating the weight of a horse based on the girth and height measurements and motivates one skilled in the art to solely measure the girth of a horse for a more accurate estimate of weight. Based on MPEP 2143.01, Carroll et al. in combination with Weisstein does not suggest or motivate a person of ordinary skill in the art to estimate the weight of a horse by measuring a girth and a height of the horse and using a mathematical formula as recited in claims 30, 32, 35, 37, 40, 42, 45, and 47.

Therefore, for the reasons set forth above, it is respectfully requested that the Examiner withdraw and reconsider the rejection of claims 30-33, 35-38, 40-43, and 45-48, as amended, and pass such claims to issue.

Summary

The foregoing is intended to be a complete response to the Office Action mailed May 05, 2003. Reconsideration and withdrawal of the objections and rejections is respectfully requested. Should the Examiner have any questions concerning the response, Applicants' attorney would welcome the opportunity to discuss such matters with the Examiner.

Respectfully submitted,



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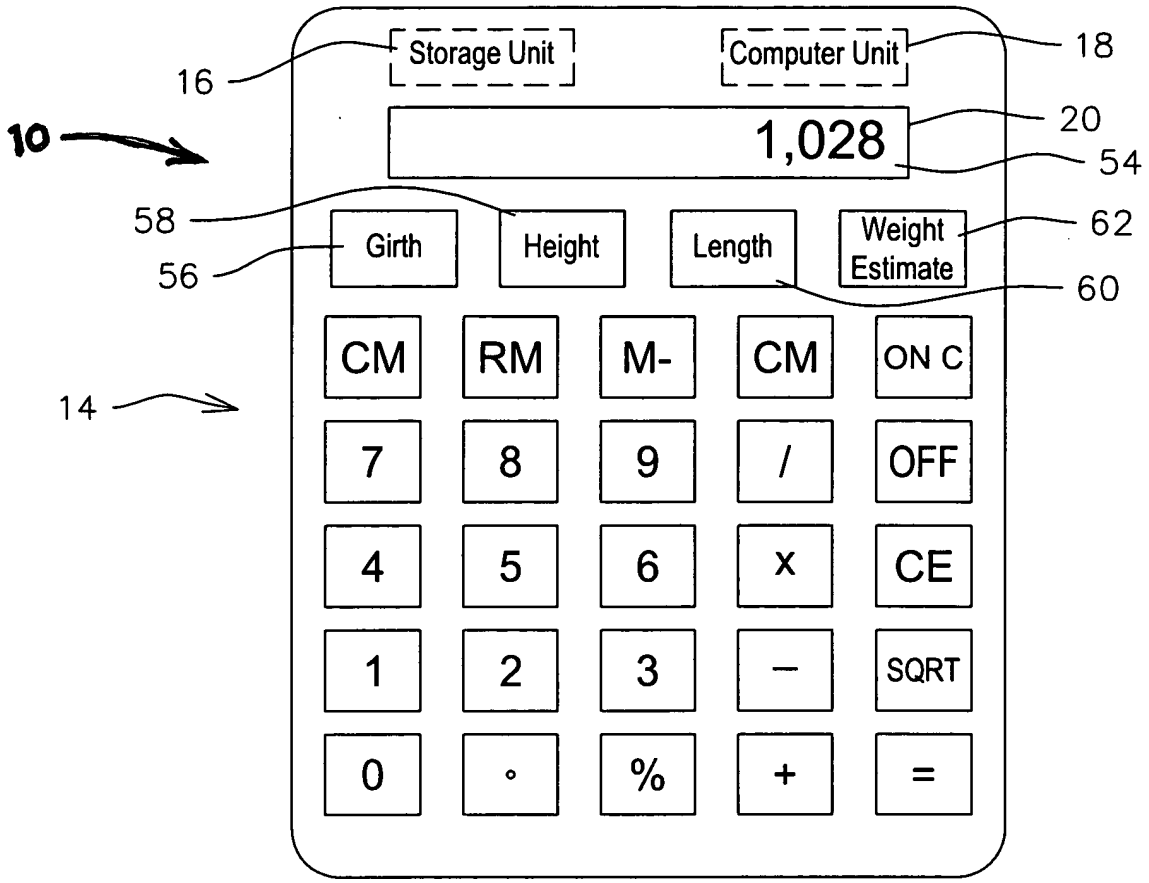

FIG. 1

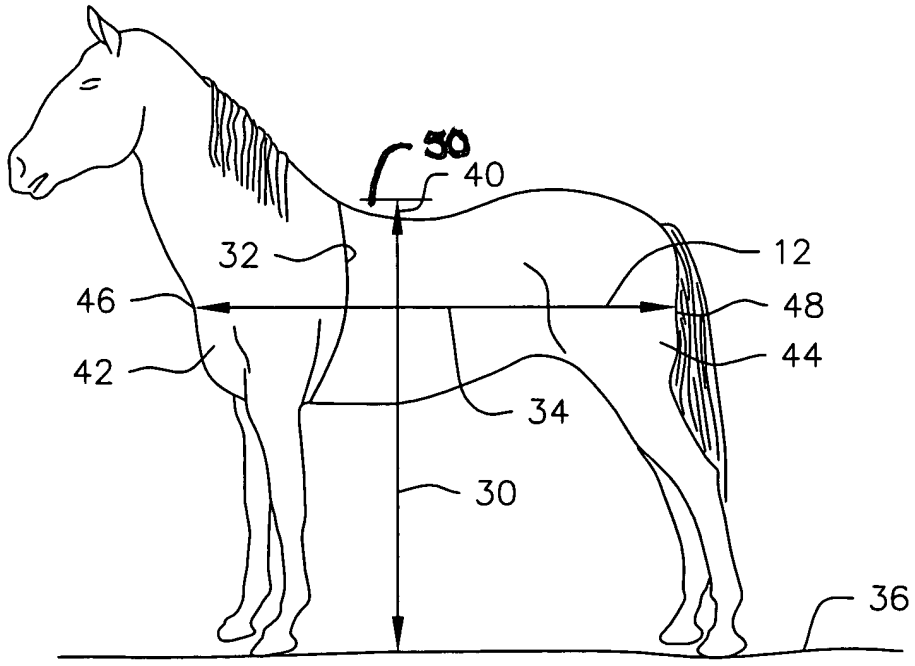

FIG. 2

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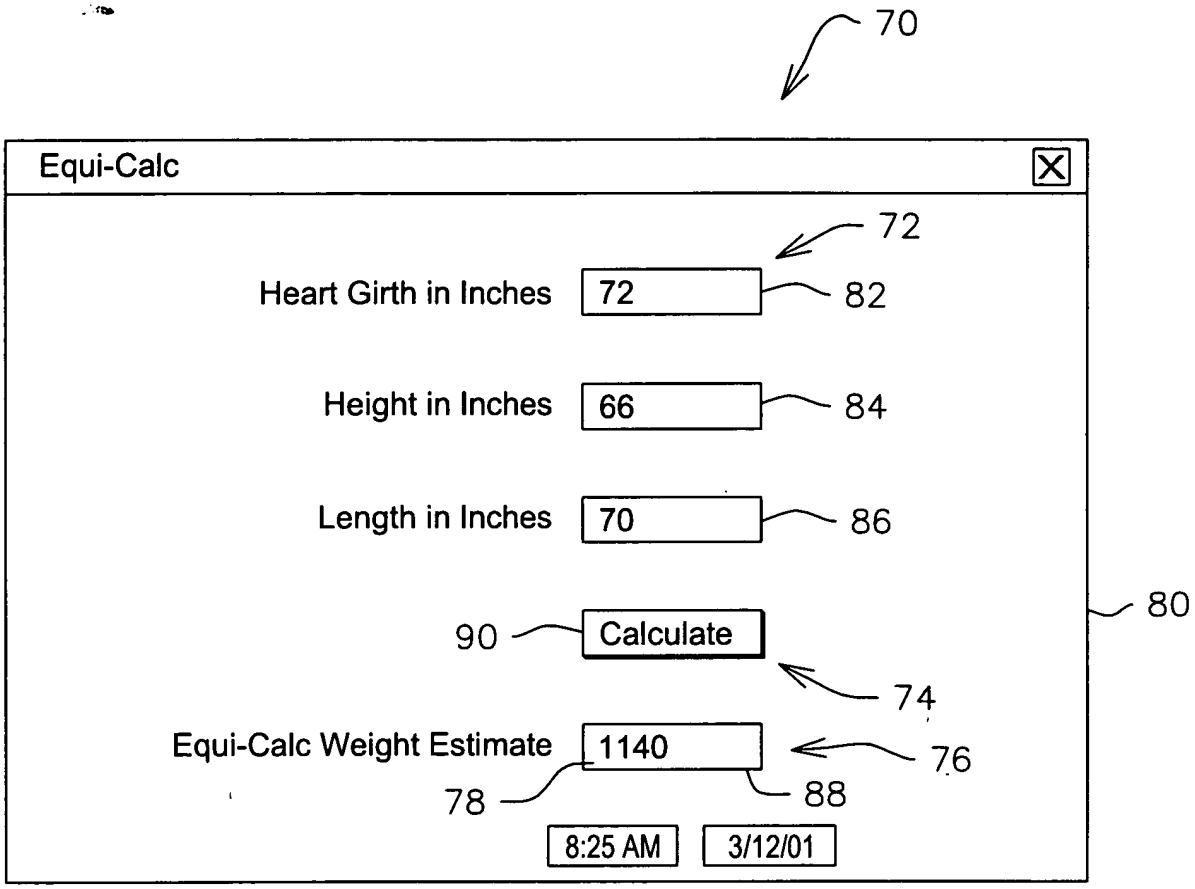

FIG. 3